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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/815,274	04/01/2004	Jar J. Lee	PD-01W127	8368

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EXAMINER	
CHEN, SHIH CHAO	

ART UNIT	PAPER NUMBER
2821	

DATE MAILED: 09/06/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/815,274	LEE ET AL.	
	Examiner	Art Unit	
	Shih-Chao Chen	2821	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *01 April 2004*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-22* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-22* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *4/1/04*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Specification

1. The disclosure is objected to because of the following informalities: on page 7, lines 15-16, "the structures 30, 32" should be changed to --the structures 30, 28--.

Appropriate correction is required.

Claim Objections

2. Claim 1 is objected to because of the following informalities: in line 6, "an excitation source" should be changed to --the excitation source--. Appropriate correction is required.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 1-19 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

5. Regarding claim 1, the phrase "can be" renders the claim(s) indefinite because the claim(s) include(s) elements not actually disclosed (those encompassed by "can be"), thereby rendering the scope of the claim(s) unascertainable.

6. Claim 4 recites the limitation "the linear progressive phase shift in the electromagnetic wave along the feed source" in lines 2-3. There is insufficient antecedent basis for this limitation in the claim.

7. Claim 7 recites the limitation "the sinuous feed" in lines 2-3. There is insufficient antecedent basis for this limitation in the claim.

8. Regarding claim 10, the phrase "can be" renders the claim(s) indefinite because the claim(s) include(s) elements not actually disclosed (those encompassed by "can be"), thereby rendering the scope of the claim(s) unascertainable

9. Claim 11 recites the limitation "the linear progressive phase shift" in lines 2-3. There is insufficient antecedent basis for this limitation in the claim.

10. Claim 17 recites the limitation "each subarray sinuous feed" in line 3. There is insufficient antecedent basis for this limitation in the claim.

11. Claim 19 recites the limitation "each subarray sinuous feed" in line 2. There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 102

12. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

13. Claims 1 are rejected under 35 U.S.C. 102(b) as being anticipated by Rupp et al. (U.S. Patent No. 6,421,021).

Regarding claim 1, Rupp et al. teaches in figures 1-8 a millimeter wave (MMW) antenna array, comprising: a continuous transverse stub (CTS) radiating aperture [80] comprising a set of spaced continuous transverse stubs, each having a longitudinal extent; an excitation source [68] for providing excitation signals in a MMW frequency

range; a feed system [72] coupled to the excitation source for exciting the stubs with MMW electromagnetic energy having a linear phase progression along the longitudinal extent of the stubs to produce an array beam.

Regarding claim 2, Rupp et al. teaches in figures 1-8 the array of Claim 1, wherein the radiating aperture [90] comprises: a waveguide structure comprising an upper conductive plate structure [94E] defining the set of continuous transverse stubs [94C, 94D] and a lower conductive plate structure [94F] disposed in a spaced relationship [b] relative to the upper plate structure.

Regarding claim 3, Rupp et al. teaches in figures 1-8 the array of Claim 2, wherein the feed system [72] comprises a feed network for launching a parallel plate mode electromagnetic wave into the waveguide structure at an end of the waveguide structure (See Fig. 8).

Regarding claim 9, Rupp et al. teaches in figures 1-8 the array of Claim 1, wherein the excitation source [68] is scannable over the MMW frequency range to produce a scanned frequency output signal as a function of time.

Regarding claim 10, Rupp et al. teaches in figures 1-8 10. A W-band antenna array, comprising: a continuous transverse stub (CTS) radiating aperture [90] comprising a two-dimensional set of CTS subarrays arranged in rows and columns, each subarray comprising a set of spaced continuous transverse stubs [94C, 94D] having a longitudinal extent; a feed system [96A, 96B] coupled to an excitation source [68] for exciting the stubs with W-band electromagnetic energy having a linear phase progression along the longitudinal extent of the stubs to produce an array beam.

Regarding claim 20, Rupp et al. teaches in figures 1-8 an antenna array, comprising: a two-dimensional array of radiating elements [62, 72] arranged in rows and columns, with a spacing along each column of one half wavelength at a center frequency in an operating band; a continuous transverse stub (CTS) radiating aperture [80] comprising a two-dimensional set of CTS subarrays [90] arranged in rows and columns, each subarray [90] comprising a set of spaced continuous transverse stubs [94C, 94D] having a longitudinal extent, and wherein the radiating elements are positioned as feed elements for the CTS subarrays; a distributed corporate feed network [96A, 96B] coupled to the array of radiating elements, the network having an input/output (I/0) port and an array of output/input (0/I) ports each for coupling to a corresponding one of the radiating elements; the corporate feed network comprising a series feed network (See Fig. 7) for each column or group of columns of the radiating elements, such that, at the center frequency, the signals at the 0/I ports along each column are in-phase or at integer multiples of 360 degrees, and as the frequency varies from the center frequency, a linear phase progression along the 0/I ports of each column is established.

Regarding claim 21, Rupp et al. teaches in figures 1-8 the antenna array of Claim 20, wherein the array has an array beam at broadside at the center frequency, and an array beam away from broadside when a signal above or below the center frequency within an operating range is input at the I/0 port of the distributed corporate feed network (See Fig. 7).

Regarding claim 22, Rupp et al. teaches in figures 1-8 the antenna array of Claim 20, wherein the operating band is a millimeter wave band.

Allowable Subject Matter

14. Claims 4-8 and 11-19 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

Correspondence

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Shih-Chao Chen whose telephone number is (571) 272-1819. The examiner can normally be reached on Monday-Friday from 7 AM to 4:30 PM, First Fri. off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Don Wong can be reached on (571) 272-1834. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Shih-Chao Chen

Primary Examiner
Art Unit 2821

Shih-Chao Chen

SHIH-CHAO CHEN
PRIMARY EXAMINER

SXC
August 31, 2005